Escape Rooms for Green Entrepreneurship

PEDAGOGICAL SEQUENCE

A Shopping Spree to the New GreenMall



KEY TOPICS

Cosmetics | Health | Environmental Impact

Target group: learners aged 16+
Duration: 4 sessions (approx. 45 - 60 minutes each)

Introduction

Cosmetic products are part of everyday life, yet their impacts on human health and the environment are often poorly understood. Ingredients such as microplastics, endocrine disruptors and persistent chemicals may pose risks to consumers and ecosystems, while marketing strategies frequently promote “natural” or “clean” images that are not always scientifically grounded.

This pedagogical sequence prepares learners for the escape room “A Shopping Spree to the New GreenMall” with a view to a better understanding of hidden challenges. Through four sessions, learners explore some health risks, environmental impacts and greenwashing practices, enabling them to act as informed investigators during the game.

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Overview of the pedagogical sequence

SESSION	THEME	MAIN FOCUS	KEY METHODS
1	Cosmetics & health basics	Ingredients and health risks	Presentation, discussion, label analysis
2	Environmental impact of cosmetics	Pollution & resource use	Case examples, visual analysis
3	Greenwashing in cosmetics	Marketing vs reality	Ad analysis, comparative tasks
4	Responsible consumption	Informed choices & synthesis	Checklist creation, game briefing



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SESSION 1: Cosmetics & health

Focus

Introduce cosmetic products, their composition and potential health concerns

Learning outcomes

Learners will be able to:

- Identify common categories of potentially harmful cosmetic ingredients
- Explain why certain cosmetic ingredients may pose health risks

Key concepts, definitions and examples

Common categories of cosmetic ingredients with possible health risks include:

Ingredients of concern

MI/MCI - strong skin sensitisers that may also harm aquatic organisms.
DMDM hydantoin - releases small amounts of formaldehyde and may cause allergic dermatitis.
Parfum, limonene, linalool - may trigger irritation or fragrance allergies.
Polyethylene or PMMA - persistent microplastics that accumulate in ecosystems.
Oxybenzone - may cause skin reactions and can adversely affect aquatic organisms.

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Preservatives

These ingredients prevent the growth of bacteria and mold, which is necessary for product safety. However, some preservatives may interfere with hormonal balance. Long-term or repeated exposure can also increase the risk of skin irritation or allergic reactions, especially for sensitive users.

Fragrances

Fragrances are added to improve the smell of cosmetic products but they can contain dozens of undisclosed chemical compounds. Some of these substances are known allergens and can cause skin irritation, headaches or respiratory discomfort. Because fragrance formulas are often protected as trade secrets, consumers may not know exactly what they are exposed to.

Plastic-based ingredients

These ingredients are used to improve texture, durability or appearance. They may contribute to microplastic exposure, as tiny particles can be released during use and washing. While health effects are still being studied, concerns include accumulation in the body and indirect effects through environmental pollution.

Chemical UV filters used in sunscreens

These filters protect the skin from UV radiation but some may cause skin irritation. Certain filters have also been linked to skin allergies. So precaution is advisable, especially for children and frequent users.

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Activities

- Introduction of key concepts using simple ingredient lists
- Guided reading of cosmetic labels. **Products to examine:** a heavily fragranced body spray, a facial scrub containing plastic-based ingredients, disposable cosmetic wipes and sunscreen containing potentially problematic UV filters. Learners identify what makes each product questionable.
- Identification of ingredient categories (preservatives, fragrances, colorants)
- Group discussion: “Why don’t consumers usually read ingredient lists?”

Evaluation

Exit slip: name one ingredient category and its function.

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SESSION 2: Environmental impact of cosmetics

Focus

Understand how cosmetic products affect ecosystems throughout their lifecycle.

Learning outcomes

Learners will be able to:

- Define microplastics and chemical pollution
- Identify the main environmental impacts of cosmetic products
- Explain how cosmetic products contribute to water and waste pollution

Key concepts, definitions and examples

Microplastics

Microplastics are very small plastic particles that are intentionally added to products or result from the breakdown of larger plastic items. In cosmetics, microplastics have been used in products such as exfoliating scrubs or are released from plastic-based ingredients. After use, they are washed down drains, pass through water treatment systems and accumulate in rivers and oceans, where they can harm aquatic life.

Chemical pollution

Chemical pollution occurs when harmful or persistent substances are released into the environment, contaminating water, soil or air. Cosmetic ingredients such as preservatives, fragrances or UV filters can enter ecosystems through wastewater. These chemicals may persist in the environment, disrupt aquatic organisms and accumulate in food chains.

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Environmental impacts of cosmetic products

This refers to the negative effects they have on ecosystems throughout their lifecycle. These impacts include water pollution from ingredients washed off during use, waste generation from single-use packaging and resource consumption during production. Transport and manufacturing processes also contribute to greenhouse gas emissions.

Water and waste pollution

Water and waste pollution result from the release of substances and materials that ecosystems cannot easily absorb or break down. Cosmetic products contribute to water pollution when chemicals and microplastics enter wastewater systems and to waste pollution through plastic packaging that is often difficult to recycle. Over time, this leads to accumulation in landfills and natural environments.

Activities

- Introduction of key concepts with case examples
- Visual analysis of the lifecycle of a cosmetic product
- Small-group discussion: “At which stages does pollution occur?”
- Short case study on microplastics in bottled water

Evaluation

Exit activity linking one cosmetic ingredient to its environmental impact.

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SESSION 3: Greenwashing & misleading claims in cosmetics

Focus

Identify deceptive marketing strategies used in the cosmetic industry.

Learning outcomes

Learners will be able to:

- Define greenwashing in the context of cosmetics
- Identify misleading cosmetic marketing claims
- Distinguish between reliable and questionable eco-labels

Key concepts, definitions and examples

Greenwashing

Greenwashing in cosmetics refers to marketing practices that make a cosmetic product appear more environmentally friendly or healthier than it actually is. Brands may use vague terms, attractive green imagery or selective information to suggest sustainability, while the product's ingredients, packaging or supply chain remain harmful or poorly documented.

Misleading marketing claims

These are statements or visuals that suggest benefits that are exaggerated, unclear or not supported by evidence. In cosmetics, this includes terms like "natural," "clean" or "chemical-free," which have no strict legal definition. Such claims can distract consumers from problematic ingredients or environmental impacts.

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Eco-labels

Eco-labels are symbols or certifications intended to indicate that a product meets certain environmental or ethical standards. Reliable eco-labels are issued by independent organizations, follow clear criteria and involve third-party audits, while questionable eco-labels are often created by brands themselves, lack transparency or use vague standards, making them more marketing tools than guarantees.

Transparency

Transparency refers to how openly a brand shares information about its ingredients, sourcing, certifications and environmental impact. In cosmetics, transparent brands provide clear ingredient lists, explain their claims and reference credible certifications, making it easier for consumers to verify whether sustainability claims are trustworthy or misleading.

Certification credibility

Certification credibility describes how reliable and trustworthy a label or certification is based on who issues it and how standards are enforced. In the cosmetic sector, credible certifications are managed by independent bodies with clear criteria and regular audits, while low-credibility labels often lack oversight and are primarily used as marketing tools.

Activities

- Introduction of key concepts using real cosmetic advertisements
- Ad analysis: identifying vague language and misleading imagery
- Label sorting task: reliable vs questionable eco-labels
- Group discussion: “What makes a claim trustworthy?”

Evaluation

- Group reflection: one cosmetic claim you now question and why.

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SESSION 4: Responsible cosmetic consumption & escape room preparation

Focus

Enable learners to make informed cosmetic choices and prepare for gameplay.

Learning outcomes

Learners will be able to:

- Define responsible cosmetic consumption
- Apply health and environmental criteria to cosmetic choices
- Use key concepts to investigate products during the escape room

Key concepts, definitions and examples

Responsible cosmetic consumption

Responsible cosmetic consumption means choosing cosmetic products by considering their potential effects on health and the environment rather than focusing only on price or appearance. It involves reading ingredient lists, questioning marketing claims and favoring products with safer ingredients, credible certifications and reduced environmental impact.

Precautionary principle

The approach leads to avoiding substances or products when there is scientific uncertainty about potential health or environmental risks. In cosmetics, this means limiting the use of products containing suspected chemicals, even if definitive proof of harm is still debated.

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Informed decision-making

The process involves making choices based on verified information and clear criteria relating to ingredient risks, environmental impact and label credibility to investigate products and justify whether they are acceptable, questionable or misleading.

Example health-related criteria

- Ingredient safety: preference for products without ingredients suspected of being strong allergens or irritants.
- Fragrance content: limiting or avoiding products with unspecified “parfum,” especially for sensitive skin.
- Transparency of formulation: clear and complete ingredient lists that allow consumers to identify potential risks.

Example environmental criteria

- Absence of microplastics: products without plastic-based ingredients that contribute to water pollution.
- Packaging impact: reduced, recyclable, refillable or reusable packaging to limit waste.
- Lifecycle impact: consideration of how the product is produced, used and disposed of, including water and energy use.

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Activities

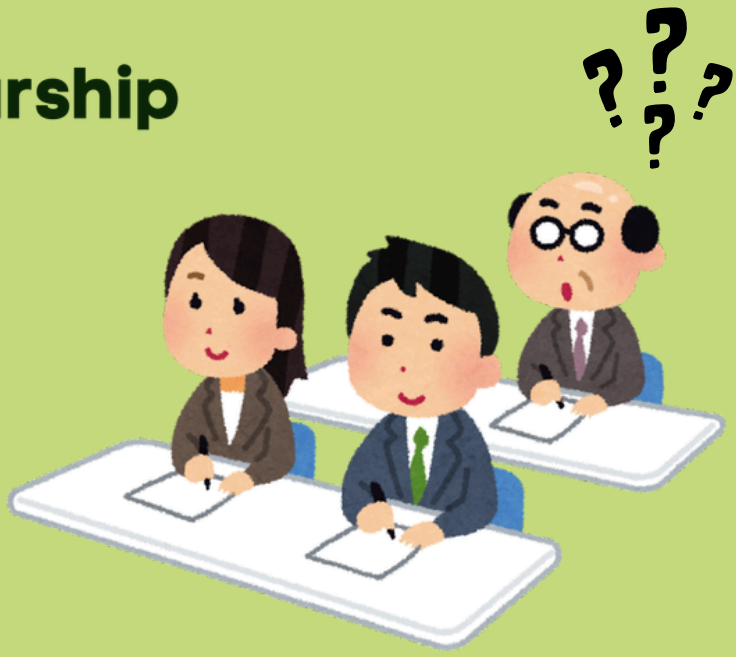
- Group creation of a “responsible cosmetics checklist”
- Comparison task: evaluate two similar cosmetic products
- Synthesis discussion linking health, environment and marketing
- Escape room briefing: explanation of how cosmetic-related clues connect to learned concepts

Evaluation

In pairs, learners prepare a short presentation explaining whether a product should be sold in the GreenMall, using health and environmental arguments.

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